and Progress in Prehistoric Times. Much of what he has to say has a metaphysical or an ethical import, and much is in the way of kindly comment upon fellow anthropologists. If, however, we search for the psychology, we find absolutely no new principle discovered, no new method of analysis proposed, nothing that definitely "sticks in the mind" as marking a clear advance. We are told in many graceful ways that the folk-lorist is to account for his materials "in terms of a self-active, self-unfolding soul"; we learn that man's emotional nature remains relatively stable, though historical conditions constantly change; that religion is a way of life, and not a set of propositions offering themselves to belief; and that suggestibility is peculiarly effective in the primitive community. In many ways the most interesting paper is the brief one on "The Transvaluation of Culture." Here a real attempt is made to analyse the forms of transference of folk materials which commonly occur as a result of the interplay of cultures. The analysis is extremely interesting, but not sufficiently developed, and this criticism applies to the whole book.

In the final paper on "Anthropology and University Education" Dr. Marett says many good things well.

The book is most pleasing to read throughout, for it could scarcely be better written. Yet it is disappointing. It is too vague and too general. Modern psychology can do more for folk-lore than Dr. Marett makes clear, and at the same time it has everything to gain and nothing to lose by a clear recognition of the equal value and necessity of an objective, sociological method of approach.

F. C. BARTLETT.

Elementary Chemistry.

(1) *Intermediate Text-book of Chemistry*. By Alexander Smith. Pp. vi + 520. (London: G. Bell and Sons, Ltd., 1920.). Price 8*s*. 6*d*. net.

(2) *College Text-book of Chemistry*. By William A. Noyes. Pp. viii + 370. (New York: Henry Holt and Co., 1919.)

THE above titles may be misleading to English readers, the ground covered by each book being practically of Matriculation standard. The authors have, however, conveyed in addition interesting information not usually found in English text-books of similar character. The chemistry of common life and of industry receives brief treatment, and these elementary books should prove interesting to the advanced English student who, in preparing for examinations, has attained detailed knowledge of such matters as the syntheses of alkaloids and other things he is never likely to see, but has been left in ignorance of chemical processes in the body, the growth of plants, the manufacture of such things as glue, ink, bread, candles, and soap, and most of the applications of chemistry to daily life.

(1) The fundamentals of chemical theory receive careful consideration in both books; that of Prof. Smith treats in detail of the theory of electrolytic dissociation and its applications. Exception might be taken to the treatment of Avogadro's law and its relation to atomic weights. This is dealt with in the same way by both authors. The molecular weight is defined as the weight of a gaseous substance filling a volume of 22·40 litres at S.T.P., and the atomic weight of an element as the least weight found in this volume of any one of its gaseous compounds. No reason is given when the definitions are stated as to why 22·40 litres has been chosen, and it is only in the case of ideal gases that the definitions are valid. This method leads Prof. Smith to say, for instance, when describing hydrogen chloride (p. 123): "The density of the gas (weight of 1 c.c.) is 0·001628. Of more interest to the chemist is the weight of 22,400 c.c. or 22·4 liters (the gram-molecular volume), namely, 36·468 grams. This is the molecular weight of the substance. As we have seen (p. 77), it is made up of 1·008 g. of hydrogen combined with 35·46 g. of chlorine." This statement, if taken literally, is incorrect. If it is not to be taken literally, why should three places of decimals be given?

Although Scheele was the first to discover oxygen, the claims of Priestley as an independent discoverer have not so far been questioned. We now learn from Prof. Smith that Priestley is "incorrectly credited with the 'discovery' of the element," and that he described the gas as "unbreathable and noxious (poisonous)." In reality, Priestley breathed the gas himself, and recommended its use in pneumonia. The statement on the same page that oxygen was discovered by Bayen in April, 1774, is another piece of historical inaccuracy. The memoir of Bayen to which reference is doubtless made (*cf.* "Opuscules," vol. i., 1798) contains no indication that this experimenter knew that the "air" given off on heating mercuric oxide differs from common air (*ibid.*, pp. 252, 312, and the editor's introduction), which is the real point at issue. Equally unfortunate is the statement that the law of conservation of energy is due to "J. R. Mayer (1842), Colding (1843), and Helmholtz (1847)," without a mention of Joule!

It seems a pity that such spelling as "woolen," "mantel," "ladeled," "marvelous," and "sulfur"

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should minimise the value of a text-book to English students in schools, where the rest of the curriculum has to be kept in mind by the teacher.

(2) Prof. Noyes's text-book is particularly interesting and suggestive, and very well got up, with the exception of the illustrations. The treatment is in general more concise than in the other volume, but loses nothing in the way of clearness and accuracy. It should prove a useful book to teachers in the higher forms of schools who wish to add to the interest of their lessons. The summaries at the ends of the chapters will be found useful in revision, and there are numerous suggestive questions and exercises. The elements of organic chemistry, in so far as they concern daily life, are treated in a most interesting manner, and the book should prove serviceable to students of domestic science.

It may fairly be said of both books that they are of a higher order of interest and accuracy than is usual in English books of the same standard. There is too much tendency to follow stereotyped lines in most cases in English books, which no doubt results from a desire on the part of the writers to conform to what they imagine to be useful for examinational purposes. The American writers as a whole are free from this infirmity. J. R. P.

Our Bookshelf.

Moses: The Founder of Preventive Medicine. By Capt. Percival Wood. (Biblical Studies.) Pp. xi+116. (London: S.P.C.K.; New York: The Macmillan Co., 1920.) Price 4*s.* net.

CAPT. PERCIVAL WOOD is, of course, not the first to recognise Moses as the founder of preventive medicine, but he has marshalled his evidence in an interesting and compelling manner in the light of modern research. Thus he ascribes the third plague that smote the Egyptians, that of lice, as the indirect result of the first plague of fouled water-supply, remarking that it does not take long in a warm climate to become infested with lice when personal hygiene is neglected. The frogs, similarly, were driven on to the land by the fouling of the water, and the myriads of dead frogs tended to breed the flies of the fourth plague. The lice and the flies and the rain, together with the destruction of their crops by locusts and hail, would likewise tend to engender epidemic disease among the famine-stricken Egyptians, and hence the culminating plague of all, that of death (the selection of the firstborn in the narrative is a dramatic detail added by a later hand).

The author passes in review the legislation on hygiene and on the control of infectious diseases, and the regulations regarding dietetics. Finally, the diet of the Israelites during their wanderings is considered. The nature of manna is problematical. There was evidently a lack of proper food, and the people probably suffered from deficiency diseases—dwarfs, "broken-footed," and "crookbacks" are mentioned, conditions that might result from rickets. As a popular and accurate description of an ancient system of hygiene this book can be cordially recommended. R. T. H.

Structural and Field Geology: For Students of Pure and Applied Science. By Dr. James Geikie. Fourth edition, revised. Pp. xxiv+454+lxix plates. (Edinburgh: Oliver and Boyd; London: Gurney and Jackson, 1920.) Price 24*s.* net.

THE demand for a fourth edition of this handsome work is sufficient testimony to its educational value. The volume reflects the lucid teaching of its author, and the present editor, Dr. Robert Campbell, has found it desirable to make alterations only in definitions and in descriptions of minerals and rocks, in accordance with current usage. Chemical formulæ, which are so useful in suggesting alliances among rock-forming minerals, are still studiously avoided, except in the case of simple oxides. This is surely now unnecessary, when some knowledge of chemistry must be required of all students of a scientific subject. Though Dr. James Geikie expressly stated that he did not write for specialists, a very little more would have held the interest of the reader.

The great aim of the book, however, is the realisation that rocks are to be studied out of doors, and that structural geology is based upon what the earth itself reveals. The selection of full-page photographic illustrations, from those of mountain-crests like Goat Fell to those of rock-surfaces as they actually are seen in Nature, calls us urgently to the field. Contrast the majestic gloom of the Torridonian and Cambrian masses in Plate lxviii with the sunlit and periwinkled rocks on the Arran shore in Plate xliii, and you perceive the artist in the field-surveyor. It is a compliment to the publishers, as well as to the memory of the author, to say that this is a gift-book of a high attraction. G. A. J. C.

Notes Pratiques sur l'Observation Visuelle des Etoiles Variables. Par Maurice E. J. Gheury de Bray. Extrait de *Ciel et Terre.* (Published by the Author: 40 Westmount Road, Eltham, S.E.9.) Price 2*s.* 4*d.* post free.

THE careful and persistent observation of variable stars has risen from being the occasional hobby of a few observers to one of the most important branches of stellar physics, from which far-reaching deductions have been drawn concerning star-life, absolute magnitudes, and the structure of the universe. The number of variables is now so large that a considerable army of workers is required. The author's aim is to enlist recruits, and the field of work that he recommends is that

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